

1 41. (New) The method of claim 1, wherein updating the data representing the
2 timeline further comprises forming the subset of time intervals by a timespan
3 algebraic operation.

1 42. The method of claim 8, wherein the control system is further
2 configured to form the subset of the time intervals by performing a timespan
3 algebraic operation.

REMARKS

Claims 1-29 and 38-42 are pending in this application. The Examiner rejected claims 1-37. The Applicants are amending claims 1-16, 18-19, and 21-24 to clarify the claimed subject matter, and canceling claims 30-37 without prejudice. The Applicants submit that no new matter has been added by way of this amendment and kindly request (re)consideration and allowance of claims 1-29 and 38-42.

Rejections Under 35 U.S.C. § 101

The Examiner rejected claims 1-37 under 35 U.S.C. § 101 asserting that the claimed invention is directed to non-statutory subject matter. The Examiner asserted that

[t]he claims are described in terms of a data entity and what they "describe." The recitations in this manner are not considered to define tangible subject matter that moves to define an article or structure contemplated by 35 USC 101. The language does not move to set forth computer readable, for example,

which comprises computer readable instructions that interact and cooperate in such a way as to provide a concrete, tangible, and useful output. The nominal recitation of a "database" or "control system" or "server", etc..., being old and necessary antecedent structure, does not serve to convert that which is otherwise non-statutory subject matter into statutory subject matter.

Applicants respectfully submit that upon entry of the amendments herein to independent claims 1, 8, 15, and 21, and in view of the teachings of the specification, these claims are directed to at least one practical application, which can include searching functions. The claimed invention as whole produces a useful, concrete and tangible result, which has real world value. See M.P.E.P. § 2106, p. 2100-5; *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1601-1602 (Fed. Cir. 1998); See also *AT&T Corp. V. Excel Communications, Inc.*, 172 F.3d 1352, 1358, 50 U.S.P.Q.2d 1447 (Fed. Cir. 1999) (where the claimed element of generating a "record" included an "indicator," which was determined to represent information about a call recipient's carrier, and consequently, a *useful, non-abstract* [i.e., concrete and tangible] result that facilitates differential billing of phone calls)(emphasis added).

Lastly, claims 31 and 32-37 will be canceled, without prejudice, upon entry of this amendment. Consequently, the § 101 rejection of these claims are now moot.

Accordingly, the Applicants respectfully submit that independent claims 1, 8, 15, and 21, as well as their dependents, are directed toward statutory

subject matter under 35 U.S.C. § 101 and has practical application in the technological arts.

Rejections Under 35 U.S.C. § 112

The Examiner rejected claims 21-29 and 31-37 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the Applicants regard as the invention.

Applicants are amending independent claim 21 to recite “a method of searching a database.” Claims 22-27 depend from claim 21 and are directed to “the method of searching a database.” Applicants kindly request the withdrawal of the § 112 ¶ 2 rejection associated with these claims.

The Office Action indicates that the phrase “representing a database entity” in claim 32 is ambiguous. With the cancellation of claims 32-37, this rejection is now moot.

Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1, 2, 4-6, 15, 16, 18, 19, 21-24, and 28-37 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Number 5,948,040 to DeLorme et al. (hereinafter “*DeLorme*”). The Examiner asserted that *DeLorme*

discloses a system and methods for user interactive reservation of services via the Internet (col. 1, lines 28-46). Disclosed are indications of services, providers, locations, temporals, etc. . . (see example at col. 28, line 64-col. 29, line 9) arranged so as to allow the user to locate and select services according to that user’s

desire (col. 8, line 23-col. 9, line 18). Reservables may be located via "browsing" or searching techniques (col. 20, lines 7-15). A user may be directed to services via vertical classifications of related services (col. 16, line 60-col. 17, line 7). Geographic regions are employed to constrain presented services (see example at col. 40, line 62-col. 41, line 5). Users and providers are identified (col. 64, lines 11-14) and engagement is made with a selected provider contingent upon prescribed criteria such as service executable times, dates, locations, participants, etc. . . (col. 67, line 29-col. 68, line 6). Databases, servers, computer readable medium, and control systems are employed.

The Applicants respectfully traverse because DeLorme fails to teach or suggest each of the claimed elements recited in amended claims 1, 8, 15, 19 and 21. For example, *DeLorme* discloses a computerized travel reservation information and planning system for providing transactionable offers for goods/services such as transportation or performance tickets and diverse accommodations reservations. See col. 1, ll. 43-46. Further, *DeLorme* discloses a relational database containing relationships between topical, geographic, temporal and accounting or transactional data. In accordance with *DeLorme*, the data is arranged in tables for the computerized temporal and/or transactional sorting/filtering of travel information data records subject to topical and geographic database relations. See col. 56, ll. 2-14; and FIG. 7.

In particular, the temporal data stored in *DeLorme's* database

addresses years, dates, times, other usual chronological measures, indicators and/or arrays pertaining to events, time periods, appointments, actual happenings or postulated temporal occurrences--as recorded, proposed, scheduled, negotiated or predicted at points or periods in time, typically by one or more persons, interested parties or

organizations, including TRIPS retail users or participating travel information/service providers.

See col. 33, ll. 19-29.

But nowhere does *DeLorme* teach or suggest that its database is built using, for example, the temporal data by “comparing at least one of the time intervals to at least a subset of timelines of the plurality of data entities; and updating the data representing the timeline of the first data entity to be comprised of a subset of the time intervals to facilitate the search being limited to the first data entity,” as recited in amended claim 1. As such, *DeLorme* fails to teach or suggest each of the claimed elements set forth in claim 1. For at least this reason, independent claim 1 is allowable and the Applicants respectfully request the withdrawal of the § 102 rejection.

Claims 2-7, as amended, and claims 28-29 depend from allowable claim 1 and are thus also allowable for at least the same reasons as claim 1. Hence, claims 1-7 and 28-29 are in condition for allowance.

In addition, *DeLorme* fails teach or suggest that its system includes a control system configured to “update the data associated with at least one reservable, where the updated data represents a subset of the time intervals . . . and is further configured to search for and retrieve reservables matching service requests against the subset of the time intervals, the service requests provided from a source or sources external to [*DeLorme's*] database,” as recited in amended claim 8. Thus, *DeLorme* fails to teach or suggest each of the claimed elements set forth in claim 8. For at least this reason, independent

claim 8 is allowable and the Applicants respectfully request the withdrawal of the § 102 rejection in connection with this claim.

Claims 9-14, as amended, depend from allowable claim 9 and are thus also allowable for at least the same reasons as claim 8. Hence, claims 8-14 are in condition for allowance.

Moreover, *DeLorme* fails teach or suggest that its system and methods use a data entity in its database to, for example, "form[] [a] data entity by . . . updating the data representing the indication of the time intervals to form a subset of the extended time line that excludes the time duration of an engaged reservable (engagement) such that only the services associated with the subset of the extended time line is available for the search; and searching for the data entity associated with the subset of the extended time line," as set forth in amended claim 15. Thus, *DeLorme* fails to teach or suggest each of the claimed elements set forth in claim 15. For at least this reason, independent claim 15 is allowable and the Applicants respectfully request the withdrawal of the § 102 rejection in connection with this claim.

Claims 16-20 depend from allowable claim 15 and are thus also allowable for at least the same reasons. Hence, claims 15-20 are in condition for allowance.

Lastly, amended claim 21 recites a method comprising "receiving a customer request including . . . a requested time duration; . . . matching at least [a] requested time duration . . . against reservables associated with [a] time line if no other reservable associated with the service is yet engaged;

matching at least the requested time duration . . . against reservables associated with a subset of the time line if another reservable associated with the service is engaged; and retrieving matching reservables” Nowhere does *DeLorme* teach or suggest that its computerized travel reservation information and planning system retrieves a search result, for example, by matching reservables associated with a subset of a time line if another reservable associated with the service is engaged. Thus, *DeLorme* fails to teach or suggest each of the claimed elements set forth in claim 21. For at least this reason, independent claim 21 is allowable and the Applicants respectfully request the withdrawal of the § 102 rejection in connection with this claim.

Claims 22-27 depend from allowable claim 21 and are thus also allowable for at least the same reasons. Hence, claims 21-27 are in condition for allowance.

Rejections Under 35 U.S.C. § 103

The Examiner rejected dependent claims 3, 7, 12-14, 17, 10 and 25-27 under 35 U.S.C. § 103(a) as being unpatentable over *DeLorme* in view of U.S. Patent Number 6,141,653 to Conklin et al. (hereinafter “*Conklin*”). Although the Office Action indicates that *DeLorme* does not teach the claimed subject matter of claims 3, 7, 12-14, 17, 10 and 25-27, the Office Action concludes that it would have been obvious to combine the teachings of the cited references to obtain the claimed invention. The Applicants traverse because

the cited references do not teach or suggest the claimed combination of elements.

As stated herein, *DeLorme* fails to teach or suggest each of the claimed elements set forth in the independent claims. Thus, *Conklin* cannot be combined with *DeLorme* to obtain the claimed combination of elements in each dependent claim 3, 7, 12-14, 17, 10 and 25-27. Moreover, each of these claims depend from an allowable independent claim, and thus, are allowable for at least this reason. Accordingly, claims 3, 7, 12-14, 17, 10 and 25-27 are allowable over *DeLorme* in view of *Conklin*. The Applicants respectfully request that this § 103 rejection be withdrawn.

Attached hereto is an appendix entitled "VERSION WITH MARKINGS SHOWING CHANGES MADE," which is a marked-up version of the changes being made to this application by this Response.

The Applicants respectfully request that the Examiner enter this Response, (re)consider the pending claims and issue a Notice of Allowance. If the Examiner believes a telephone conference would expedite prosecution of this application, the Applicants request that the Examiner telephone the undersigned at the number below.

Respectfully submitted,

Swart et al.

Date: _____

8 JAN 03

By: _____



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VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE CLAIMS

1 1. (Once Amended) A method of building [In] a database to perform a search
2 for a computer-implemented transactional service, the database including a
3 plurality of data entities, the method comprising:
4 defining a first data entity describing a reservable service (reservable)[,]
5 as comprising[:] data representing an indication of a service to be performed,[:]
6 a time line for the indicated service describing time intervals in which the
7 service may be performed over an extended time period,[:] and an indication of
8 the time duration required for performing the service;
9 comparing at least one of the time intervals to at least a subset of
10 timelines of the plurality of data entities; and
11 updating the data representing the timeline of the first data entity to be
12 comprised of a subset of the time intervals to facilitate the search being limited
13 to the first data entity.

1 2. (Once Amended) The method [reservable] of claim 1, the reservable further
2 comprising data representing [an indication of] a supplier offering to perform
3 the service.

1 3. (Once Amended) The method [reservable] of claim 1, the reservable formed
2 as an Extensible Markup Language (XML) expression.

1 4. (Once Amended) The method [reservable] of claim 1, the reservable further
2 comprising data representing [an indication of] vertical classification as a
3 particular category or family of related services.

1 5. (Once Amended) The method [reservable] of claim 1, the reservable further
2 comprising data representing [an indication of] a geographic region in which
3 the service is constrained to be performed.

1 6. (Once Amended) The method of claim 1, further comprising [In a database
2 **for a transaction service,]**
3 defining a second data entity describing an engaged reservable service
4 (engagement)[,] as comprising data representing[:] an indication of [a] the
5 service to be performed₁[;] a date, a time of the timeline where the time
6 duration is not within the subset of the time intervals, and a site for the service
7 to be performed₁[;] an indication of a customer having engaged the reservable
8 service₁, and an indicator that the second data entity is an engagement to be
9 consummated at a future time.

1 7. (Once Amended) The method [engagement] of claim 6, the engagement
2 formed as an Extensible Markup Language (XML) expression.

1 8. (Once Amended) In a computer-implemented system for exchanging a
2 transactional service[A database] comprising:

3 a database comprising a plurality of reservable services (reservables)
4 stored as positive first data entities, each reservable including data
5 representing an indication of a service to be performed, a time line for the
6 indicated service describing time intervals in which the service may be
7 performed over an extended time period, and an indication of the time duration
8 required for performing the service; and

9 a control system[;] configured to update the data associated with at least
10 one reservable, where the updated data represents a subset of the time
11 intervals in the timeline that the indicated service may be performed, and is
12 further configured to [characterized in that the control system] search[es]
13 for and retrieve[s] reservables matching service requests against the subset of
14 the time intervals, the service requests provided from a source or sources
15 external to the database.

1 9. (Once Amended) The system [database] of claim 8 wherein reservables are
2 organized hierarchically by vertical categories, and wherein the control system
3 searches only in those portions of the database comprising reservables
4 matching the category of the service requests.

1 10. (Once Amended) The system **[database]** of claim 8, the database also
2 comprising engaged reservable services (engagements) stored as
3 negative**[positive]** second data entities, each engagement including data
4 representing an indication of a service to be performed, a date, a time of the
5 timeline where the time duration of the second data entities is not within the
6 subset of the time intervals and a site for the service to be performed, and an
7 indicator that the second entity is an engagement to be consummated at a
8 future time, wherein the control system forms engagements from reservables
9 following matches found between the service requests and the reservables.

1 11. (Once Amended) The system **[database]** of claim 10 wherein the control
2 system forms the second entities based upon engaged reservables in the
3 database following formation**[creation]** of an engagement**[, and adds**
4 **engagements to the database]**.

1 12. (Once Amended) The system **[database]** of claim 10 wherein the
2 reservables and the engagements are implemented as Extensible Markup
3 Language (XML) expressions.

1 13. (Once Amended) The system **[database]** of claim 12 wherein the control
2 system creates supplier-independent reservables from other XML entities in the
3 database, including resource capabilities and availabilities.

1 14. (Once Amended) The system **[database]** of claim 13 wherein the control
2 system creates supplier-specific reservables including supplier identification.

1 15. (Once Amended) A method for using **[forming]** a data entity in a database
2 of a computer system to provide a search of transactional services, the data
3 entity for describing a reservable service (reservable), comprising [the steps of]:
4 forming the data entity by

5 **[(a)]** establishing data representing an indication of a service to be
6 performed, **[:]** **[(b)]** adding data representing an indication of a time
7 duration for the service, **[:]** **[(c)]** adding data representing an indication of
8 time intervals over an extended time line wherein the service may be
9 performed, **[:]** **[and]** **[(d)]** adding data representing an indicator that the
10 service is not engaged **[reserved (engaged)]**, and updating the data
11 representing the indication of the time intervals to form a subset of the
12 extended time line that excludes the time duration of an engaged
13 reservable (engagement) such that only the services associated with the
14 subset of the extended time line is available for the search; and
15 searching the data entities associated with the subset of the extended
16 time line.

1 16. (Once Amended) The method of claim 15 further comprising a step **[(e)]**
2 adding an indication of a supplier offering to perform the service.

1 17. The method of claim 15 wherein the data entity is formed as an Extensible
2 Markup Language (XML) expression.

1 18. (Once Amended) The method of claim 15 further comprising a step **[(e)]** for
2 adding an indication of vertical classification as a particular category or family
3 of related services.

1 19. (Once Amended) The method of claim 15 **[A method]** further comprising
2 **[for]** forming another data entity in a database, the another data entity
3 describing an engaged reservable service (engagement), comprising the steps of:

4 **[(a)]** accepting a request for the service to be performed from a customer
5 external to the database;

6 **[(b)]** searching the database **[an inventory]** of reservable services
7 (reservables), each reservable comprising an indication of a service to be
8 performed, an indication of time intervals in an extended time line wherein the
9 service may be, and an indicator that the service is not engaged **[reserved**
10 **(engaged)]**;

11 **[(c)]** selecting a reservable capable of fulfilling the request for service;

12 **[(d)]** copying information from the reservable to create an engagement
13 specifying a date, time of the extended timeline where the time duration is not
14 within the subset of the time intervals and place for the service to be
15 performed; and

16 **[(e)]** associating the engagement with the customer making the request,

17 wherein the engaged reservable for the time duration will not be available
18 to be queried for another search.

1 20. The method of claim 19 wherein the reservable is an Extensible Markup
2 Language (XML) expression and the engagement formed is an XML expression.

1 21. (Once Amended) A method of searching [In] a database comprising
2 **[reservable services (reservables) stored as positive data entities, each**
3 **reservable including an indication of a service to be performed, a time line**
4 **for the service describing time intervals in which the service may be**
5 **performed over an extended time period, and an indication of the time**
6 **duration required for performing the service, a method for matching**
7 **reservables with customers, comprising the steps of]:**

8 **[(a)]** receiving a customer request including data representing details of a
9 desired service, where the data representing details includes a requested time
10 duration;

11 **[(b)]** searching the database for reservables, where each reservable
12 includes an indication of a service to be performed, a time line for the service
13 describing time intervals in which the service may be performed over an
14 extended time period, and an indication of an expected time duration required
15 for performing the service;

16 matching at least the requested time duration of the details of the
17 customer request against reservables associated with the time line if no other
18 reservable associated with the service is yet engaged;

19 matching at least the requested time duration of the details of the
20 customer request against reservables associated with a subset of the time line
21 if another reservable associated with the service is engaged; and

22 **[(c)]** retrieving matching reservables suitable to satisfy the customer
23 request.

1 22. (Once Amended) The method of claim 21 wherein reservables are
2 organized hierarchically by vertical categories, and wherein, **[in step (b)]** the
3 database is searched only in those portions comprising reservables matching
4 the category of the service requests.

1 23. (Once Amended) The method of claim 21 further comprising **[a step (d)**
2 **for]** forming engagements from reservables following matches found between
3 the customer **[service]** request**[s]** and the reservables, each engagement
4 including an indication of a service to be performed, a date, a time of the
5 timeline where the time duration is not within the subset of the time intervals
6 and a site for the service to be performed, and an indicator that the entity is an
7 engagement to be consummated at a future time.

1 24. (Once Amended) The method of claim 23 further comprising **[a step (e)**
2 **for]** deleting engaged reservables from the database, and adding engagements
3 to the database.

1 25. The method of claim 23 wherein the reservables and the engagements are
2 implemented as Extensible Markup Language (XML) expressions.

1 26. The method of claim 25 wherein supplier-independent reservables are
2 created from other XML entities in the database, including resource capabilities
3 and availabilities.

1 27. The method of claim 26 wherein supplier-specific reservables are created
2 including supplier identification.

1 28. The reservable of claim 1, further comprising an indication of a maximum
2 duration of time for performing the service.

1 29. The reservable of claim 1, further comprising an indication of a minimum
2 duration of time for performing the service.

1 30. (Canceled).

1 31. (Canceled).

1 32. (Canceled).

1 33. (Canceled).

1 34. (Canceled).

1 35. (Canceled).

1 36. (Canceled).

1 37. (Canceled).

1 38. (New) The method of claim 1, wherein the first data entity and the subset
2 of the plurality of data entities are associated with the same indicated service
3 to be performed.

1 39. (New) The method of claim 1, wherein the subset of time intervals of the
2 first data entity do not overlap the time intervals of the subset of the plurality
3 of data entities.

1 40. (New) The method of claim 1, wherein updating the data representing the
2 timeline further comprises forming the subset of time intervals by a timespan
3 algebraic operation.

1 41. (New) The method of claim 40, wherein the timespan algebraic operation
2 is an intersection.

1 42. (New) The method of claim 8, wherein the control system is further
2 configured to form the subset of the time intervals by performing a timespan
3 algebraic operation.